Experiences of Transgender-Related Discrimination and Implications for Health: Results From the Virginia Transgender Health Initiative Study

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Objectives. We examined relationships between social determinants of health and experiences of transgender-related discrimination reported by transgender people in Virginia.

Methods. In 2005 through 2006, 387 self-identified transgender people completed a statewide health needs assessment; 350 who completed eligibility questions were included in this examination of factors associated with experiences of discrimination in health care, employment, or housing. We fit multivariate logistic regression models using generalized estimating equations to adjust for survey modality (online vs paper).

Results. Of participants, 41% (n = 143) reported experiences of transgender-related discrimination. Factors associated with transgender-related discrimination were geographic context, gender (female-to male spectrum vs male-to-female spectrum), low socioeconomic status, being a racial/ethnic minority, not having health insurance, gender transition indicators (younger age at first transgender awareness), health care needed but unable to be obtained (hormone therapy and mental health services), history of violence (sexual and physical), substance use health behaviors (tobacco and alcohol), and interpersonal factors (family support and community connectedness).

Conclusions. Findings suggest that transgender Virginians experience widespread discrimination in health care, employment, and housing. Multilevel interventions are needed for transgender populations, including legal protections and training for health care providers. (*Am J Public Health.* 2013;103:1820–1829. doi:10.2105/AJPH.2012.300796)

Transgender is an umbrella term used to describe people whose gender identity or expression does not conform to that typically associated with the sex they were born as or assigned to at birth.[1] The Virginia Transgender Health Initiative Study was a multiyear project that sought to assess the health care and social service needs of transgender people in Virginia and elucidate the social correlates of health among this population.[2] The study was conducted using a conceptual model that viewed the social stigma of being transgender as a root cause of poor health status, producing societal factors such as discrimination that accumulate over the life course. We examined the prevalence of experiences of perceived transgender-related discrimination in health care, employment, and housing; explored factors associated with perceived transgender-related discrimination, including how those who experienced discrimination differed from those who had not; and investigated barriers to accessing health services in Virginia, with an eye toward increased access to and use of services for transgender populations.

Cross-sectional and community-based convenience samples have shown that transgender people report high rates of discrimination across multiple areas, including health care, employment, and housing.[3–11] A needs assessment of 182 transgender people in Philadelphia, Pennsylvania, found that 26% had been denied medical care because they were transgender, and 52% had difficulty accessing 1 or more health services in the past year.[5] Data from the San Francisco Transgender Community Project (n = 515) revealed that 39% of female-to-male (FTM) respondents reported being denied health care or having difficulties obtaining health care compared with 13% of male-to-female (MTF) respondents.[12] In a Chicago, Illinois, study that sampled 111 transgender people, 12% were refused routine health care, 3% were refused mental health care, and 14% reported difficulty getting emergency health care because they were transgender.[6]

The impact of the social stigma of transgenderism on employment and housing discrimination has also been measured. In a national sample of 402 transgender people, 37% reported employment-related discrimination and were nearly 5 times more likely to experience some form of violence than were those who had not experienced such discrimination.[8] In studies conducted in Washington, DC; Philadelphia; and San Diego, Los Angeles, and San Francisco, California, employment discrimination was reported to range from 14% to 60%.[9,12–16] A San Francisco study of 515 transgender people found that 62% had experienced discrimination in employment, housing, or health care;[4] almost half (46%) of MTF participants reported employment discrimination, and 27% reported housing discrimination.[12] Among FTM participants, 57% reported employment discrimination and 20% reported housing discrimination. In a Washington, DC, study of 252 transgender people (69% Black, 22% Hispanic), 15% reported job loss as a result of being transgender.[15] Although just 4% of participants reported housing discrimination, 19% of the sample was homeless.[10] A 2009 review of US data highlighted persistent reporting and negative impact of physical violence against transgender individuals.[17]

The decision to conduct the Virginia Transgender Health Initiative Study was based on growing evidence that the social determinants of health, including experiences of violence and

discrimination, may result in broad negative psychological and physiological changes with important implications for health across populations.[4,18–28] If the study found that transgender-related discrimination in health care, employment, and housing were prevalent in Virginia, public health strategies could be developed to intervene and ameliorate social and environmental influences that negatively affected the population's health.

METHODS

The Virginia Transgender Health Initiative Study was implemented by the Community Health Research Initiative of Virginia Commonwealth University, under the direction of the Virginia Department of Health and its HIV Community Planning Committee.[29–30] These research partners sought to improve health care access by identifying gaps in services needed by transgender Virginians and recommending possible means for improving access to services.

Study Design

Between September 2005 and July 2006, 387 respondents completed a 1-time cross-sectional quantitative survey. We included 350 participants in the final analysis sample (229 MTF participants and 121 FTM participants); 37 were excluded because of missing or incomplete responses to eligibility criteria. Participants represented 60 (44%) of the 136 cities and counties in Virginia. Participants completed a paper questionnaire or an online version at a secure Web site, choosing the method each preferred. Online survey links were distributed via transgender-focused Web sites and posted at all paper survey distribution points. Participants were most likely to learn about the survey through a friend (27%), the Internet (21%), and support groups (13%).

Recruitment

We used community-based participatory research principles, stressing "research *with,* rather than *on* communities" and affirming the value of communities' experiential knowledge in a collaborative process.[31(p500)] A statewide Transgender Taskforce was formed to involve transgender individuals at all levels of study design and implementation. The survey field manager coordinated study recruitment, working with the Transgender Taskforce and Virginia HIV Community Planning Committee members, who promoted participation in the survey through service providers, transgender support groups, community events, informal peer networks, and a newsletter produced to enlist community engagement and participation. We used purposive sampling methods, including venue-based strategies and informal peer networks, to recruit participants.

Eligibility Criteria

Transgender people use a wide variety of terms to self-identify, and some gender-variant people (e.g., gender-nonconforming people) do not use *transgender* as either an individual identity or as an umbrella term to refer to themselves. For this study, we defined *transgender* to mean those who had lived or wanted to live full time as the gender opposite to their birth or physical sex, had or wanted to physically modify their body to match who they felt they really were inside, or had worn or wanted to wear the clothing of the opposite sex to express an inner, cross-gender identity. Individuals were eligible to participate in the study if they met 3 criteria: (1) considered themselves transgender under the preceding definition, (2) were aged 18 years or older, and (3) were residents of or attended school in Virginia. Focus group data had been gathered in an earlier phase of the study and informed questions included in the statewide quantitative survey.[29] The survey was pilot tested at a Gay Pride event (September 2005) and underwent a final revision incorporating participant feedback.

Quantitative Needs Assessment Survey and Measures

Demographics. Demographic characteristics included age, geographic context (urban, suburban, rural), gender vector, gender identity (man, woman, transgender, other gender identity), sexual orientation, race/ethnicity, socioeconomic position (education, income, employment), and health insurance. We operationalized gender vector using the physical sex assigned at birth reported by participants. Participants were dichotomized as being on the MTF spectrum (born male) and FTM spectrum (born female). We used gender vector in the analysis for practical reasons. No disrespect was intended toward individual transgender participants who may not self-identify as MTF or FTM; the transgender population is diverse, and identities do not often fit into dichotomous boxes.

Gender transition. The survey asked dichotomous questions about gender transition: "Have you transitioned? (Are you living full-time in your gender of choice?)" "Have you ever taken hormones (estrogen or testosterone) for transgender-related purposes?" "Have you ever had surgery to modify your chest including FTM chest surgery or MTF breast augmentation (not including silicone injections)?" and "Have you ever had surgery to modify your genitalia (sex reassignment or genital reassignment surgery)?" Participants were also asked the age (in years) at which they first sought out any form of transgender-related medical intervention.

Health care. Participants were asked whether they had a regular primary care provider (PCP) and whether they were "out" to their provider about being transgender. To assess health care needs, the survey instructed participants to indicate whether they had needed any of 4 services in the past 12 months but were unable to obtain them: hormonal therapy, transgender surgery of any kind, counseling or psychotherapy, or gynecological care. Each of these services was assessed separately.

Violence. The survey also assessed adolescent and adult experiences of violence: (1) forced or unwanted sexual behavior ("Since the time you were 13 years old, have you been forced to engage in unwanted sexual activity?") and (2) physical attack ("Since the time you were 13 years old, have you been physically attacked? A physical attack includes being grabbed, choked, stabbed with a sharp object [including knives], being hit with an object [like a rock, etc.], being shot with any type of weapon"). We selected a cutoff age of 13 years because of Virginia's mandated reporting to law enforcement of any harm done to children.

HIV serostatus. Participants self-reported their HIV serostatus: HIV negative, HIV positive, or unknown.

Substance use health behaviors. Participants reported their past or current problem with smoking (tobacco) or drinking (alcohol) and whether they had ever injected drugs (not including hormones).

Interpersonal factors. The survey asked participants about family support: "Is your family supportive of your transgender status and/or gender expression?" Responses were scored on a 4-point Likert scale ranging from "very" (4) to "not at all" (1). Participants were also queried about school experiences of hostility: "In high school, did you experience hostility or insensitivity as a result of your gender identity or expression from other students, your teachers, or your school administrators?" We assessed community connection by asking participants about the number of transgender people with whom they had face-to-face contact (excluding the Internet) in the past 6 months.

Discrimination. We used a direct approach to assess individual-level self-reported personal experiences of discrimination. Six questions assessed discrimination in health care, employment, and housing (see the box on this page). We considered participants who responded "yes" to either of 2 questions in each of these areas to have experienced discrimination in that particular area and participants who answered "no" to both questions to have not.

Data Analysis

We used SAS statistical software version 9.2 (SAS Institute, Inc., Cary, NC) to perform analyses, which determined statistical significance at the $P<.05$ level. We used generalized estimating equations, a method for analyzing clustered data,[32,33] for all analyses to adjust for the study design (i.e., design covariate: online or paper). We estimated logistic regression models using PROC GENMOD in SAS with a repeated statement by study modality to account for autocorrelation (clustering) that may have been induced by the study design. The variance–covariance structure was parsimoniously specified as exchangeable (compound symmetry).

Primary outcome. We constructed a dichotomous outcome of having experienced any discrimination because of transgender status, gender expression, or both. Participants who self-reported experiencing discrimination in health care, employment, or housing were coded as having experienced transgender-based discrimination; those not reporting discrimination in any of these areas were coded as not having experienced such discrimination.

Primary independent variables of interest. We conducted a review of current research on transgender discrimination and health to conceptually inform and guide statistical analyses[2] and identified 7 domains of interest as prominent areas of investigation: sociodemographic characteristics, gender transition, access to care and health care needs, gender-based violence, HIV serostatus, substance use health behaviors, and interpersonal factors (family, school, and community). We conducted bivariate analyses across each of the domains to examine significant associations with the primary outcome of interest (any discrimination):

1. *Sociodemographic characteristics.* Given that socioeconomic position has been associated with discrimination in previous studies with transgender people,[7,8] we analyzed all available socioeconomic indicators to examine their association with discrimination. Demographic variables (Table 1) included in the bivariate analyses were age (continuous), geographic context (urban, rural, suburban), gender vector (MTF or FTM), gender identity (man, woman, transgender, other gender identity), sexual identification (heterosexual or sexual minority), race/ethnicity (racial/ethnicity minority, yes or no), education (high school diploma or GED, less or more than a high school education), income (<$16 999, yes or no), employment (unemployed, yes or no), and health insurance (yes or no). Age at first awareness of being transgender and number of other transgender people seen at least once in the past 6 months are also reported (Table 2). Sociodemographic characteristics did not vary across mode of data collection.
2. *Gender transition.* The gender transition domain consisted of living full-time in one's gender of choice (yes or no), being on hormones for transgender-related purposes (yes or no), having had either chest or genital–sex reassignment surgery or transgender-related surgery (yes or no), and having never sought medical attention.
3. *Access to care and health care needs.* This domain assessed whether participants had a regular PCP (yes or no), were out to a regular PCP (yes or no), and had needed health care services in the past 12 months but were not able to obtain these services (hormonal therapy, transgender-related surgery, counseling or psychotherapy, gynecological care; yes or no).
4. *Gender-based violence.* The gender-based violence domain consisted of adolescent and adult history of forced or unwanted sex (yes

Questions Assessing Discrimination in Health Care, Employment, and Housing: Virginia Transgender Health Initiative Study, September 2005–July 2006

Area[a]	Survey Questions
Health care	1. Have you ever experienced discrimination by a doctor or health care professional due to your transgender status and/or gender expression?
	2. Have you ever been denied enrollment in a health insurance plan because of your transgender status?
Employment	3. Have you ever been denied a job you applied for due to your transgender status and/or gender expression?
	4. Have you ever been fired from a job due to your employer's reaction to your transgender status and/or gender expression?
Housing	5. Have you ever lost housing or been denied a housing opportunity due to your transgender status and/or gender expression?
	6. Have you ever been denied a bed in a homeless shelter due to your transgender status and/or gender expression?

[a]We considered participants who responded "yes" to either of the 2 questions in each area to have experienced discrimination in that particular area and participants who answered "no" to both questions to have not.

TABLE 1—Sociodemographic Characteristics of the Study Sample by Transgender People Reporting Discrimination and No Discrimination: Virginia Transgender Health Initiative Study, September 2005–July 2006

Characteristic	Discrimination (n = 143), Mean ±SD (Median) or No. (%)	No Discrimination (n = 207), Mean ±SD (Median) or No. (%)	Total Sample (n = 350), Mean ±SD (Median) or No. (%)	OR (95% CI)[a]	*P*
Current age, y	35.53 ±11.98 (33.50)	38.18 ±13.10 (38.00)	37.08 ±12.70 (36.00)	0.98 (0.06, 1.01)	.163
Geographic context					
Urban	69 (48)	77 (37)	146 (42)	1.00 (Ref)	
Rural	23 (16)	38 (18)	61 (17)	0.63 (0.32, 1.23)	.177
Suburban	47 (33)	91 (44)	138 (39)	0.53 (0.52, 0.54)	< .001
Missing	4 (3)	1 (< 1)	5 (1)	. . .	. . .
Gender vector					.047
MTF spectrum	89 (62)	140 (68)	229 (65)	1.00 (Ref)	
FTM spectrum	54 (38)	67 (32)	121 (35)	1.26 (1.00, 1.60)	
Gender identity					
Transgender	58 (41)	88 (43)	146 (42)	1.00 (Ref)	
Man	26 (18)	42 (20)	68 (19)	0.96 (0.26, 3.58)	.949
Woman	41 (29)	48 (23)	89 (25)	1.35 (0.48, 3.78)	.573
Other gender identification	18 (13)	29 (14)	47 (13)	0.98 (0.40, 2.42)	.968
Sexual identification					.794
Heterosexual	29 (20)	44 (21)	73 (21)	1.00 (Ref)	
Sexual minority[b]	114 (80)	163 (79)	277 (79)	1.04 (0.76, 1.42)	
Race/ethnicity[c]					
White/Caucasian	79 (55)	137 (66)	216 (62)	1.00 (Ref)	
Any racial/ethnic minority	64 (45)	70 (34)	134 (38)	1.75 (1.51, 2.02)	< .001
Black/African American	35 (24)	53 (26)	88 (25)	1.50 (1.45, 1.56)	< .001
Other race/ethnicity	29 (20)	17 (8)	46 (13)	3.25 (0.72, 14.71)	.126
Education					< .001
High school education	103 (72)	172 (83)	275 (79)	1.00 (Ref)	
< high school education	40 (28)	35 (17)	75 (21)	2.18 (1.50, 3.14)	
Income					< .001
Above low-income level	80 (56)	138 (67)	218 (62)	1.00 (Ref)	
100% low-income level (< $16 999)	63 (44)	69 (33)	132 (38)	1.57 (1.51, 1.64)	
Employment					.012
Employed	102 (71)	175 (85)	277 (79)	1.00 (Ref)	
Unemployed	41 (29)	32 (15)	73 (21)	2.22 (1.19, 4.13)	
Health insurance					< .001
Insured	93 (38)	155 (63)	248 (71)	1.00 (Ref)	
No health insurance	50 (35)	52 (25)	102 (29)	1.62 (1.55, 1.70)	
Mode of survey completion					.083
Web	65 (45)	75 (36)	140 (40)	. . .	
Paper and pencil	78 (55)	132 (64)	210 (60)		

Note. CI = confidence interval; FTM = female-to-male; MTF = male-to-female; OR = odds ratio.
[a]We used generalized estimating equations to fit bivariate logistic regression models, adjusted for clustering induced by study design (design covariate: Web vs paper-and-pencil survey).
[b]Sexual minority was defined as gay, lesbian, bisexual, queer, or questioning.
[c]Black/African American and Other race/ethnicity are subsets of racial/ethnic minority. The bivariate comparisons shown therefore compare racial/ethnic minority to White/Caucasian respondents, then Black/African American and Other race/ethnicity respondents each to White/Caucasian respondents.

TABLE 2—Gender Transition, Health Care, Health Indicators, and Family and School Context by Transgender People Reporting Discrimination and No Discrimination: Virginia Transgender Health Initiative Study, September 2005–July 2006

Characteristic	Discrimination (n = 143), Mean ±SD (Median) or No. (%)	No Discrimination (n = 207), Mean ±SD (Median) or No. (%)	Total Sample (n= 350), Mean ±SD (Median) or No. (%)	OR (95% CI)[a]	*P*
Age first aware transgender, y	10.14 ±7.04 (8.00)	11.67 ±8.23 (10.00)	11.06 ±7.80 (10.00)	0.97 (0.97, 0.98)	< .001
Other transgender people seen at least once in the past 6 mo	3.42 ±1.22 (3.00)	3.14 ±1.43 (4.00)	3.25 ±1.35 (4.00)	1.17 (1.15, 1.20)	< .001
Gender transition					
Live full-time	83 (55)	69 (45)	152 (43)	2.76 (2.60, 2.92)	< .001
Hormones (estrogen or testosterone)	100 (70)	98 (47)	198 (57)	2.58 (2.54, 2.62)	< .001
Either chest or genital SRS surgery	43 (30)	35 (17)	78 (22)	2.20 (1.77, 2.73)	< .001
Surgery to modify chest	33 (23)	32 (15)	65 (19)	. . .	. . .
Genital surgery or SRS	24 (17)	9 (4)	33 (9)	. . .	. . .
Never sought medical intervention	29 (20)	73 (35)	102 (29)	0.45 (0.40, 0.50)	< .001
Health care					
Regular PCP	81 (57)	130 (63)	211 (60)	0.78 (0.56, 1.08)	.131
Out to PCP about being transgender	66 (46)	83 (40)	149 (43)	1.27 (0.72, 2.25)	.401
Uncomfortable with PCP	25 (17)	29 (14)	54 (15)	1.13 (1.05, 1.22)	.001
Had to educate PCP	37 (26)	32 (15)	69 (20)	2.04 (0.75, 5.56)	.164
Uncomfortable unknown provider	75 (52)	101 (49)	176 (50)	1.16 (0.94, 1.43)	.169
Access to health care: needed the service but unable to obtain it in past 12 mo					
Needed hormonal therapy	58 (41)	51 (25)	109 (31)	2.23 (2.05, 2.43)	< .001
Needed transgender-related surgery	45 (31)	42 (20)	87 (25)	1.92 (1.89, 1.96)	< .001
Needed counseling or psychotherapy	49 (34)	39 (19)	88 (25)	2.26 (1.13, 4.53)	.021
Needed gynecological care	34 (24)	32 (15)	66 (19)	1.80 (1.31, 2.48)	< .001
Violence					
Sexual (forced or unwanted sex)	58 (41)	35 (17)	93 (27)	3.39 (3.07, 3.73)	< .001
Physical (physically attacked)	80 (56)	52 (25)	132 (38)	3.88 (2.79, 5.39)	< .001
HIV positive	11 (8)	17 (8)	28 (8)	0.85 (0.73, 1.01)	.058
Substance use health behaviors					
Ever used tobacco	88 (62)	135 (65)	223 (64)	0.85 (0.80, 0.89)	< .001
Tobacco problem ever	38 (27)	42 (20)	80 (23)	1.41 (0.13, 1.76)	.002
Current tobacco problem	26 (18)	21 (10)	47 (13)	1.96 (1.21, 3.18)	.007
Past or current drinking problem (alcohol)	37 (26)	43 (21)	80 (23)	1.34 (1.30, 1.39)	< .001
Injection drug use ever	10 (7)	11 (5)	21 (6)	1.32 (1.18, 1.47)	< .001
Interpersonal factors					
Family not supportive	53 (37)	56 (27)	109 (31)	1.67 (1.41, 1.98)	< .001
Experienced hostility in high school	69 (48)	61 (29)	130 (37)	2.25 (2.00, 2.53)	< .001

Note. CI = confidence interval; FTM = female to male; MTF = male to female; OR = odds ratio; PCP = primary care provide; SRS = sex reassignment surgery. The sample sizes in each category total more than the column heads since respondents could check more than 1 response.
[a]We used generalized estimating equations to fit bivariate logistic regression models, adjusted for clustering induced by study design (design covariate: Web vs paper-and-pencil survey).

or no) and having been physically attacked (yes or no).

5. *HIV serostatus.* This domain consisted of self-reported HIV serostatus (HIV positive, yes or no).
6. *Substance use health behaviors.* The substance use health behaviors domain assessed current and lifetime tobacco use (yes or no), alcohol use (yes or no), and injection drug use (yes or no).
7. *Interpersonal factors.* Interpersonal factors included family being not very or not at all supportive (yes or no); history of hostility by peers, teachers, or school administrators in high school (yes or no); and number of transgender people whom participants personally encountered face to face at least once in the past 6 months (continuous).

Multivariate logistic regression analyses. We fit separate multivariate logistic regression models for each of the independent variables

of interest within each domain that was significant in the bivariate analyses, adjusting for age, geographic context, gender vector, race/ethnicity, socioeconomic position, and health insurance, using any discrimination as an outcome.

RESULTS

Demographics and other characteristics of the study sample are summarized by participants reporting any experience of transgender-related discrimination (n = 143; Table 1) and participants reporting no discrimination (n = 207; Table 2). We present the results from the bivariate analyses examining differences in indicators by reported discrimination (odds ratios adjusted for study design).

Demographics and Other Sample Characteristics

The sample had a mean age of 37.08 years (SD = 12.70 years). More than one third (38%) of the participants were racial/ethnic minorities (25% Black, 13% other: < 1% American Indian/Alaskan Native, < 1% Asian/Pacific Islander, 7% multiracial, 4% Hispanic); 38% were living at 100% or below the low income level in Virginia (< $16 999 annually); 21% had a high school diploma, GED, or less; and 29% did not have health insurance. When queried about their sexual orientation, the majority (79%) self-identified as being a sexual minority, including gay or lesbian, bisexual, queer, or questioning (Table 1).

Being younger at age of first transgender awareness was significantly associated with discrimination. Participants reported seeing a mean number of 3.25 (SD = 1.35) other transgender people face to face at least once in the past 6 months. A significant odds ratio based on the number of transgender people seen in the past 6 months distinguished those who reported discrimination from those who did not (Table 2).

Gender Transition

Overall, 29% had not sought any transgender-related medical intervention (i.e., hormones, surgery). Those who reported seeking transgender-related medical intervention first sought services at a mean age of 29.00 (SD = 11.88). The majority (57%) of the sample reported being on hormones (estrogen or testosterone) for transgender-related purposes; 22% reported having had chest or genital–sex reassignment surgery (19% had surgery to modify their chest; 9% had genital–sex reassignment surgery).

Health Care

A majority (60%) reported having a regular PCP; 43% reported being out to their PCP. Among participants who reported having a regular PCP, 15% reported being very uncomfortable or uncomfortable discussing transgender-specific health care needs with their provider, and 20% reported they had to educate their PCP about their health care needs.

More than one quarter of the sample reported needing but not being able to obtain access to at least 1 transgender-specific service in the past 12 months. Needed but not received services included hormonal therapy (31%), transgender-related surgery (25%), counseling or psychotherapy (25%), and gynecological care (19%).

Violence, HIV Serostatus, and Substance Use Health Behaviors

Participants reported high rates of adolescent and adult experience of violence (27%) and forced or unwanted sex since age 13 years; 38% reported having been physically attacked since age 13 years.

Of participants, 8% self-reported being HIV positive. Strikingly high rates of tobacco use were observed among the sample, with 64% reporting ever having used tobacco, and 23% reporting a lifetime problem and 13% a current problem with smoking (nicotine). A past or current drinking problem (alcohol) was reported by 23%; 6% reported a lifetime history of injection drug use.

Interpersonal Factors and Discrimination

Nearly one third (31%) reported having families who were not at all or not very supportive of their transgender status, gender expression, or both. More than one third (37%) reported negative experiences in high school, including experiencing hostility from peers, teachers, or school administrators.

Overall, 41% (n = 143) of the sample reported experiences of transgender-related discrimination in one or more areas: health care, 27% (n = 94); employment, 22% (n = 78); and housing, 9% (n = 32). Figure 1 provides an overview of discrimination experiences for each of the areas and in combination.

Adjusted logistic regression analyses. We fit separate blocked multivariate logistic regression models for the independent variables of interest within 6 domains, adjusted for age, geographic context, gender vector, race/ethnicity, socioeconomic position (education and income), and health insurance.

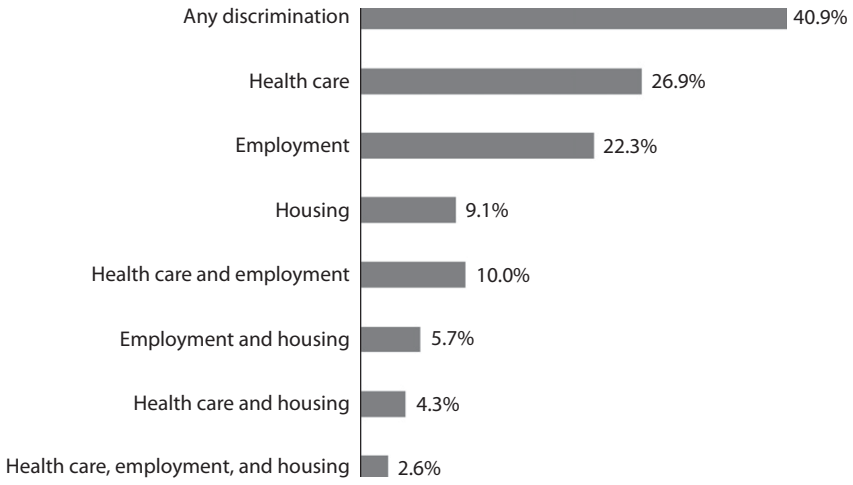

FIGURE 1—Experiences of transgender-related discrimination reported by transgender people in Virginia (n = 350): Virginia Transgender Health Initiative Study, September 2005–July 2006.

TABLE 3—Adjusted Multivariate Generalized Estimating Equations Models With Blocked Models Fit to Examine Variables Across Each Domain: Virginia Transgender Health Initiative Study, September 2005–July 2006

Model	AOR (95% CI)	*P*
1: Sociodemographics		
Rural	0.63 (0.32, 1.25)	.186
Suburban	0.63 (0.54, 0.72)	< .001
FTM spectrum	1.40 (1.17, 1.68)	< .001
Racial/ethnic minority	1.15 (1.08, 1.22)	< .001
Low education	1.55 (1.12, 2.15)	.008
Low income (100% low-income level < $16 999)	1.36 (1.31, 1.41)	< .001
No health insurance	1.31 (1.22, 1.39)	< .001
2: Gender transition		
Live full-time	1.85 (1.70, 2.02)	< .001
Age first aware transgender	0.97 (0.94, 0.99)	.004
Hormones (estrogen or testosterone)	2.18 (1.72, 2.76)	< .001
3: Health care needs		
Hormonal therapy	1.72 (1.66, 1.78)	< .001
Transgender-related surgery	1.10 (0.95, 1.28)	.201
Counseling or psychotherapy	1.54 (1.00, 2.37)	.049
4: Violence		
Sexual violence	2.22 (1.75, 2.81)	< .001
Physical violence	3.20 (1.83, 5.60)	< .001
5: Substance use health behaviors		
Tobacco problem ever	1.33 (1.04, 1.71)	.025
Past or current drinking problem (alcohol)	1.30 (1.24, 1.37)	< .001
6: Interpersonal factors		
Family not supportive	1.45 (1.22, 1.71)	< .001
Experienced hostility in high school	2.05 (1.53, 2.76)	< .001
Community connectedness	1.27 (1.19, 1.36)	< .001

Note. AOR = adjusted odds ratio; CI = confidence interval; FTM = female-to-male. We used generalized estimating equations to fit multivariate logistic regression models, adjusted for clustering induced by study design (design covariate: Web vs paper-and-pencil survey). Models 2–6 included the following sociodemographic covariates: geographic context (rural, suburban, with urban as the referent), gender vector (FTM vs male-to-female), race/ethnicity (racial/ethnic minority vs not), education (low vs high education), income (100% low-income level vs not), and health insurance (no health insurance vs insured). In models 2–6, sociodemographic factors remained statistically significant as follows: Model 2, gender transition: suburban, FTM, racial/ethnic minority, education, income, no health insurance. Model 3, health care needs: suburban, FTM, racial/ethnic minority, education, and income. Model 4, violence: suburban, FTM, racial/ethnic minority, income, and no health insurance. Model 5, health behaviors: suburban, FTM, racial/ethnic minority, education, and income. Model 6, family, school, community: suburban, racial/ethnic minority, education, income, and no health insurance.

We did not fit a multivariate model for HIV serostatus because of sample size limitations. All models were fit using generalized estimating equations modeling and adjusting for clustering because of survey modality (Table 3).

Model 1. Variables independently associated with having experienced transgender-related discrimination were living in a suburban versus rural geographic area (adjusted odds ratio [AOR] = 0.63; 95% CI = 0.54, 0.72; $P < .001$); being on the FTM spectrum (AOR = 1.40; 95% CI = 1.17, 1.68; $P = .001$); being a racial/ethnic minority (AOR = 1.15; 95% CI = 1.08, 1.22; $P < .001$); having less than a high school education (AOR = 1.55; 95% CI = 1.12, 2.15; $P = .008$); reporting low income (AOR = 1.36; 95% CI = 1.31, 1.41; $P < .001$); and not having health insurance (AOR = 1.31; 95% CI = 1.22, 1.39; $P < .001$).

Models 2–6. Variables associated with model 2, gender transition, were living full time in one's gender of choice (AOR = 1.85; 95% CI = 1.70, 2.02; $P < .001$); younger age at transgender awareness (AOR = 0.97; 95% CI = 0.94, 0.99; $P < .001$); and being on hormones (AOR = 2.18; 95% CI = 1.72, 2.76; $P < .001$). Variables associated with model 3, health care needs, were hormonal therapy needed but not obtained in the past 12 months (AOR = 1.72; 95% CI = 1.66, 1.78; $P < .001$) and counseling or psychotherapy services needed but not obtained in the past 12 months (AOR = 1.54; 95% CI = 1.00, 2.37; $P = .05$); those associated with model 4, violence, were history of forced or unwanted sex (AOR = 2.22; 95% CI = 1.75, 2.81; $P < .001$) and having been physically attacked (AOR = 3.20; 95% CI = 1.83, 5.60; $P < .001$). Variables associated with model 5, substance use health behaviors, were tobacco problem ever (AOR = 1.33; 95% CI = 1.04, 1.71; $P = .03$) and past or current drinking problem (AOR = 1.30; 95% CI = 1.24, 1.37; $P < .001$). Those associated with model 6, interpersonal factors, were family not at all or not very supportive (AOR = 1.45; 95% CI = 1.22, 1.71; $P < .001$), being more connected to the transgender community (i.e., having contact with a greater number of other transgender people in the past 6 months (AOR = 1.27; 95% CI = 1.19, 1.36; $P < .001$), and having experienced hostility or insensitivity in high school (AOR = 2.05; 95% CI = 1.53, 2.76; $P < .001$).

Across fitted models 2 through 6, the following sociodemographic factors remained statistically significant: living in a suburban relative to urban geographic context was associated with decreased odds of experiencing discrimination; being a racial/ethnic minority compared with being White and reporting low socioeconomic status were both associated with increased odds of discrimination (low education, low income, or both reached statistical significance in each model). FTM compared with MTF was significant in models 2 through 5.

DISCUSSION

The Virginia Transgender Health Initiative Study results demonstrated that experiences of discrimination in health care, employment, and housing were widespread among a statewide

sample of transgender Virginians. Consistent with previous research,[3–11,15] 41% of the sample self-reported discrimination specifically resulting from transgender status, gender expression, or both. Findings suggest that experiences of discrimination were widespread among transgender people in Virginia and that multilevel interventions, including policy-level legal protections and training for health care providers, would be helpful to address the discrimination faced by this population.

Policy-level factors may be especially important to consider in transgender health given that few legal protections exist for transgender people in the United States and only a small minority of jurisdictions have enacted laws prohibiting discrimination on the basis of gender identity or expression. A prospective study with sexual minority populations (lesbian, gay, bisexual) found that living in states with discriminatory policies (same-sex marriage bans instituted during 2004 and 2005) was associated with a statistically significant increase in the number of psychiatric disorder diagnoses.[34] A similar longitudinal study with gender minority people is needed. At the time this article was conceptualized, only 13 states and the District of Columbia and 109 cities and counties (122 total jurisdictions) had legal protections for transgender or gender-variant expression.[35]

Consistent with past research,[7] socioeconomic position was associated with discrimination among the current sample of transgender people. Lower educational attainment and low income were each associated with higher fitted odds of experiencing discrimination in models adjusted for other sociodemographic characteristics. Future research on discrimination and transgender health should attend to measures of socioeconomic position, including drawing from the large body of social epidemiological work that rigorously examines measurement of socioeconomic position.[36] Intervention efforts to reach transgender people with lower socioeconomic status are especially warranted given their disproportionate experiences of discrimination.

Health care was the most common area in which discrimination was reported. Access to health care services is difficult for transgender people; culturally competent transgender-friendly health care services, including training of providers to ensure that they are sensitive and knowledgeable about transgender health, represent an underresourced and needed health service area.[2,5,6,37] Being out to a regular PCP about being transgender and needing mental health services but being unable to obtain them were both associated with increased odds of discrimination. Taken together, these findings are consistent with several assertions that have previously been made:[5,7,10,15] (1) disclosing transgender status to a medical provider may lead to experiences of discrimination, hostility, or insensitivity for transgender people; (2) the association between level of disclosure and discrimination may also reflect mistrust by transgender people of health care professionals and practitioners (i.e., reverse causation); (3) having experienced prior discrimination by a provider could lead to mistrust of a current or future health care provider (i.e., an individual may be primed for negative experiences with a provider); and (4) the low availability of transgender-sensitive providers is a barrier to accessing services for many transgender people, particularly given the gatekeeper role that many mental health providers are perceived to play. Additional mixed-methods research on patient–provider relationships may result in a more in-depth understanding of the experiences of transgender people with health care providers, improving not only the delivery of culturally competent services by providers but also interventions to help transgender people become "activated" and empowered patients.

Several transition-related factors were associated with increased odds of experiencing discrimination. First, living full time in one's gender of choice and accessing transgender procedures (i.e., hormone treatment and surgery) were significantly associated with discrimination. However, the directionality of this association cannot be inferred because of the cross-sectional nature of this study. Second, and in alignment with prior research findings,[7] younger age at first awareness of being transgender was significantly associated with increased odds of discrimination. These findings suggest that a life course approach to transgender health might allow for the consideration of the temporal ordering of discrimination, gender awareness, gender transition, and health outcomes, particularly in the context of prospective and longitudinal studies.

Interpersonal factors that may be developmentally salient also patterned alongside discrimination and warrant future investigation, including family support regarding transgender identity, gender expression, or both; experiences of hostility in school as a youth (recalled hostility in high school); and community connectedness (current levels).

Limitations

Several limitations are important to consider in interpreting study findings. First and foremost, data are subject to the limitations of a study design that descriptively measures exposure and disease status at the same point in time and does not allow for causal inference. We examined those factors that pattern along with and are associated with self-reported experiences of discrimination. However, we did not obtain the temporal ordering—for example, whether violence occurred before or after experiences of discrimination in health care, employment, or housing. Discrimination may play a role as both an exposure and an outcome in relation to health, which is particularly important given our finding that lifetime reported tobacco use and problematic drinking were each associated with discrimination in adjusted multivariate models. Future studies would benefit from longitudinal designs that allow for stronger inferences with respect to the relationship between discrimination and health among transgender people.

Second, the methodological and conceptual issues that plague much research on the topic of discrimination and health apply to the current study, including lack of a standardized methodology to measure self-reported experiences of direct discrimination, lack of psychometric measures regarding validity or reliability of instruments, potential reporting biases and measurement error, and variability in assessing chronic and acute exposures, as well as intensity, duration, and frequency of exposure.[38] Aggregating the area in which discrimination was experienced as our primary outcome (combining health care, employment, and housing into a single composite) was necessary to ensure adequate power for statistical procedures, but it limited our ability to make contrasts and draw comparisons across discrimination in health care, employment, or housing.

No probability data of the Virginia general population included transgender measures, so we could not use probability sampling and could not compare characteristics of the study sample with those of the statewide population. Involving transgender members throughout the study design and data collection facilitated recruitment of a demographically diverse sample of self-identified transgender individuals, sufficient in number and distribution to address the study questions. Because of the nonprobability methods used for recruiting study participants, results are best understood as representing the discrimination experiences of transgender populations in Virginia. Results cannot be generalized to transgender populations in other states.

Conclusions

Limitations notwithstanding, our study results are consistent with earlier efforts to understand how discrimination affects the health care of and transgender-specific services for this population group. The findings contribute to the dearth of scientific research documenting experiences of transgender-related discrimination in health care, employment, and housing and strengthen the assertion that policy changes are urgently needed to protect the health and well-being of transgender people. Additional statewide and population-level data would help to further understanding of the variety of stressors that many transgender people face across the life course, including experiences of discrimination and their potential effects on health. The Virginia Transgender Health Initiative Study was a collaborative project of the statewide Transgender Task Force working in concert with the university research unit that had supported the Virginia Department of Health and its HIV Prevention Community Planning Group for nearly 15 years when the Transgender Health Initiative Study was originated and implemented. Other states and geographic areas that similarly involve community representatives in carrying out such studies may find our methods and results useful. ■

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Contributors

J. Bradford designed and directed the study, conceived and drafted the article, and participated in analysis. S. L. Reisner conceived and drafted the article and led the analysis. J. A. Honnold assisted with design of the study and editing the article. J. Xavier participated in study methodology and questionnaire development, served as Survey Field Manager, and participated in analysis and editing of the article.

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Human Participant Protection

This study was reviewed and approved by the institutional review board of Virginia Commonwealth University.

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